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# NORANDA

MINES LIMITED



44TH ANNUAL REPORT



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## ANNUAL MEETING

April 28th, 1967, 2:30 p.m. (Toronto Time)  
King Edward Sheraton Hotel

## HIGHLIGHTS

	1966	1965	1964	1963	1962
Operating revenue .....	<b>\$276,337,000</b>	\$221,104,000	\$187,823,000	\$172,552,000	\$166,529,000
Dividends and interest earned .....	<b>14,124,000</b>	12,750,000	11,184,000	8,824,000	5,965,000
Depreciation .....	<b>11,201,000</b>	10,798,000	10,859,000	10,650,000	11,835,000
Taxes .....	<b>22,860,000</b>	18,256,000	16,515,000	12,402,000	13,248,000
Net income .....	<b>43,420,000</b>	36,209,000	32,357,000	25,978,000	21,630,000
Working capital .....	<b>60,961,000</b>	59,306,000	55,204,000	54,072,000	22,815,000
Capital expenditures .....	<b>36,387,000</b>	17,267,000	16,071,000	13,722,000	11,410,000
Total advances .....	<b>5,153,000</b>	4,569,000	3,249,000	1,386,000	5,741,000
Total long-term investments .....	<b>84,466,000</b>	86,837,000	84,691,000	72,618,000	53,283,000
Long-term liabilities .....	<b>23,583,000</b>	19,965,000	19,889,000	19,794,000	15,498,000

English and French editions of this report may be obtained from the head office of the Company at 44 King Street West, Toronto, Ontario.

On peut se procurer des copies additionnelles de ce rapport, en anglais ou en français, en s'adressant au bureau-chef de la compagnie, au 44 ouest, rue King, Toronto, Ont.



## DIRECTORS' REPORT TO THE SHAREHOLDERS

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Noranda's earnings increased for the eighth consecutive year to a new high of \$43,420,000 or \$3.64 per share, an increase of 20% over 1965. As a measure of the volume of business now being done by the Company, worldwide sales of 18 primary materials directly and on behalf of others amounted to \$415 million.

Earnings Per Share	1966	1965
From operations -----	\$ 2.49	\$ 2.02
From investments -----	1.15	1.04
Total -----	<u>\$ 3.64</u>	<u>\$ 3.06</u>
Share of undistributed earnings of unconsolidated subsidiaries -----	<u>\$ .39</u>	<u>\$ .32</u>

The quarterly dividend rate was increased in July to 45¢ per share from the previous level of 40¢, and a year-end extra of 15¢ per share was paid. Dividends totalling \$1.85 per share were paid during the year compared with \$1.70 per share in 1965.

Copper continued in tight supply and higher prices accounted for most of the increase in earnings. The influence of political factors on the copper market increased and caused the breakdown of stable prices overseas. The domestic price, at which all of Noranda's own production was sold, remained at 45¢ Cdn. per pound throughout the year. While this was considerably lower than overseas prices, it was 7<sup>3</sup>/<sub>4</sub>¢ higher than Noranda realized in 1965.

Partially offsetting the high copper price was a reduction in manufacturing earnings, due to increased costs and continued purchases of scrap at high export prices to maintain supplies to domestic consumers. Copper scrap is a prime commodity and most indus-

trial countries disallow its export. However, Canadian scrap needed by domestic consumers has been exported at prices far above the domestic price of virgin copper. When this happens, the mines whose concentrates are smelted in Canada must replace at the domestic price the metal exported as scrap. Mines which export their concentrate are not required to make any such sacrifice. The result of Government policy therefore is to encourage the export of concentrates and scrap and discourage smelting and fabricating in Canada.

There was a reduction in revenue from the iron mine on Vancouver Island and in dividend income from Craigmont Mines, both as a result of protracted strikes reflecting the extremely difficult labour conditions in British Columbia.

Exploration was at a record pace in all parts of Canada, also in the United States, Mexico, Australia and parts of Europe. This resulted in the decision to bring one property into production while others have been retained for examination. Preliminary engineering studies were made relating to the Newman property in northern British Columbia, which contains a considerable tonnage of low-grade open pit copper ore. These resulted in a decision to place the property in production at a rate of 10,000 tons of ore per day at an estimated cost of \$30 million. Also, an option was arranged to provide financing for the low-grade Brenda molybdenum-copper property near Penticton, B.C. Sinking of the twin shafts at the Saskatchewan potash property is ahead of schedule.

Expansion of the Noranda smelter and the Montreal East refinery was undertaken to accommodate more copper concentrates, largely from the Texas Gulf Sulphur mine



near Timmins, Ontario, which began shipping in November. Expansion of the Canadian Electrolytic Zinc plant at Valleyfield, Quebec, was completed during the fourth quarter. A decision was reached to enter the primary aluminum business and studies as to the method of achieving this are in progress.

Northwood Pulp's new mill at Prince George, B.C., started operations last Fall and, after a difficult startup period, is beginning to operate satisfactorily.

Noranda Manufacturing Ltd. was formed to hold and manage the fabricating subsidiaries in the group. The shares of the Wolverine Die Cast group of companies were purchased by Norcast Manufacturing Limited, in which Noranda has acquired an 80% interest, and a new plant at Windsor, Ontario, was placed in operation. The new Fergus, Ontario, plant of Canada Wire and Cable began production during the summer and Noranda Copper Mills will build a \$7.2 million strip mill, also at Fergus. Ocean Foundries near Vancouver went into production early in the year and construction of Atlantic Foundries near Bathurst, N.B., was almost complete at year end.

Subject to resolving legal, accounting and tax problems, Noranda announced its intention to offer to acquire a 51% interest in Essex Wire Corporation for a total consideration in cash and securities of \$122 million U.S. Unfortunately complications arose, and

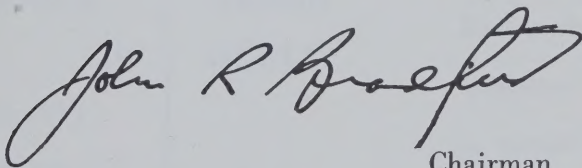
on the advice of Essex management the offer will be indefinitely deferred.

The tight money conditions existing during 1966 had little effect on Noranda. Although dividends were increased by \$1.9 million and \$36 million was invested in new capital assets, working capital rose \$1.7 million to \$61 million. Included in working capital are marketable investments at their cost of \$27 million which, at December 31, was \$29 million less than their market value. Noranda thus has adequate resources available to meet all present commitments and take advantage of new opportunities as they arise.

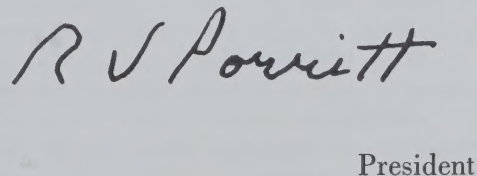
A great loss was suffered in September with the death of Norman C. Urquhart. He was an outstanding director for 25 years and made a most valuable contribution as a Vice-President for 7 years. Mr. W. P. Wilder was elected a director to fill the vacancy. New executive appointments during the year included Messrs. A. Powis, A. H. Zimmerman, R. P. Riffin and D. E. G. Schmitt as Vice-Presidents and Mr. W. G. Brissenden as General Manager - Mines.

As Noranda has grown, its activities have become increasingly complex, and a new format has been adopted in this Report in an effort to present a clearer picture of operations and progress. The following pages contain the details of a year of considerable accomplishment.

On behalf of the Board:



Chairman



President

Toronto, Ontario,  
March 7, 1967

## CONSOLIDATED STATEMENT OF OPERATIONS

FOR THE YEAR ENDED DECEMBER 31, 1966

(with comparative figures for the year 1965)

	1966	1965
REVENUE:		
From metals, products and custom tolls .....	\$276,336,672	\$221,103,895
Dividends and interest earned (including \$6,026,449 dividends and \$202,730 interest, from unconsolidated subsidiaries) (Note 1) .....	14,123,736	12,749,819
Gain on sale of investments (in 1965 less amounts written off) .....	497,439	292,460
	<u>290,957,847</u>	<u>234,146,174</u>
EXPENSE:		
Cost of metal production and products sold .....	192,802,068	152,473,195
Depreciation .....	9,857,386	8,547,438
Preproduction expenses written off .....	1,343,272	2,250,135
Administration, selling and general expenses .....	12,527,342	8,810,673
Municipal and sundry taxes .....	2,310,995	2,002,023
Interest on long-term debt .....	600,413	596,230
	<u>219,441,476</u>	<u>174,679,694</u>
	71,516,371	59,466,480
Provided for income and production taxes .....	22,860,000	18,256,393
Exploration and research written off .....	5,523,137	4,990,749
Minority interest in earnings (losses) of subsidiaries .....	(287,212)	9,922
	<u>28,095,925</u>	<u>23,257,064</u>
Net profit for the year .....	<u>\$ 43,420,446</u>	<u>\$ 36,209,416</u>

## CONSOLIDATED STATEMENT OF EARNED SURPLUS

Balance — beginning of year .....	\$150,496,183	\$136,606,561
Net profit for the year .....	43,420,446	36,209,416
	<u>193,916,629</u>	<u>172,815,977</u>
Dividends paid .....	21,960,677	20,110,188
Write-down of costs since 1963 on Kennedy Lake underground mine, abandoned .....	2,175,856	
Excess of cost over book value of investments in consolidated subsidiaries .....		1,773,606
Donation of recreation centre to the Improvement District of Manitouwadge .....		436,000
	<u>24,136,533</u>	<u>22,319,794</u>
Balance — end of year .....	<u>\$169,780,096</u>	<u>\$150,496,183</u>



# CONSOLIDATED STATEMENT OF SOURCE AND APPLICATION OF FUNDS

FOR THE YEAR ENDED DECEMBER 31, 1966

(with comparative figures for the year 1965)

	1966	1965
WORKING CAPITAL, beginning of year .....	\$ 59,306,000	\$ 55,204,000
SOURCE OF FUNDS:		
Operations —		
Net profit for the year .....	43,420,000	36,209,000
Depreciation and preproduction charges .....	11,201,000	10,798,000
Taxes on income deferred to future periods .....	4,756,000	1,720,000
	<u>59,377,000</u>	<u>48,727,000</u>
Investments (net) .....	2,371,000	(2,146,000)
Minority interest .....	1,228,000	
Sale and conversion of shares .....	4,652,000	6,300,000
Fixed asset disposals and adjustments .....	354,000	505,000
	<u>67,982,000</u>	<u>53,386,000</u>
APPLICATION OF FUNDS:		
Dividends .....	21,961,000	20,110,000
Fixed asset and deferred preproduction and exploration expenditures .....	36,387,000	17,267,000
Advances (net) .....	583,000	1,321,000
Long-term debt .....	1,138,000	1,644,000
Acquisition of minority interests .....		7,490,000
Non-current assets of Norcast acquired .....	4,887,000	
Adjustments to earned surplus (net) .....		976,000
Special refundable tax .....	1,136,000	
Miscellaneous (net) .....	235,000	476,000
	<u>66,327,000</u>	<u>49,284,000</u>
NET INCREASE .....	<u>1,655,000</u>	<u>4,102,000</u>
WORKING CAPITAL, end of year .....	<u>\$ 60,961,000</u>	<u>\$ 59,306,000</u>

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## CONSOLIDATED BALANCE

(with comparative figu

### ASSETS

	1966	1965
<b>CURRENT ASSETS:</b>		
Cash, including short-term deposits .....	\$ 7,128,923	\$ 14,470,004
Marketable investments, at cost less amounts written off (quoted market value \$55,893,023) .....	26,852,193	24,854,484
Accounts, advances and tolls receivable (\$649,125 due from unconsolidated subsidiaries) .....	58,526,582	38,566,932
Inventories of metals and products — metals at estimated realizable value, other inventories at the lower of cost or market .....	49,394,914	33,055,630
	<u>141,902,612</u>	<u>110,947,050</u>
<b>DEFERRED AND PREPAID ITEMS:</b>		
Stores, at cost .....	5,891,411	5,412,831
Mortgage loans on townsite properties .....	311,615	447,707
Miscellaneous .....	2,891,903	2,899,579
Government of Canada special refundable tax .....	1,135,947	
	<u>10,230,876</u>	<u>8,760,117</u>
<b>FIXED ASSETS:</b>		
Mining properties, at cost .....	1,676,313	1,676,313
Potash permits, at cost .....	7,275,000	7,275,000
	<u>8,951,313</u>	<u>8,951,313</u>
Land, buildings and equipment, at cost .....	182,226,734	156,022,876
Accumulated depreciation .....	106,533,028	95,368,324
	<u>75,693,706</u>	<u>60,654,552</u>
<b>INVESTMENTS, at cost less amounts written off:</b>		
Unconsolidated subsidiaries (Note 1) .....	12,238,230	13,558,492
Associated and other companies (Note 2) .....	72,227,710	73,278,795
	<u>84,465,940</u>	<u>86,837,287</u>
<b>ADVANCES:</b>		
Unconsolidated subsidiaries .....	725,172	225,171
Other companies .....	4,427,816	4,344,132
	<u>5,152,988</u>	<u>4,569,303</u>
<b>DEFERRED PREPRODUCTION AND EXPLORATION EXPENDITURES .....</b>	<u>18,092,466</u>	<u>8,622,154</u>
<b>GOODWILL ARISING ON CONSOLIDATION (Note 1(b)) .....</b>	<u>4,548,669</u>	
	<u>\$349,038,570</u>	<u>\$289,341,776</u>



# ES LIMITED

laws of Ontario)

ED SUBSIDIARIES

## HEET — DECEMBER 31, 1966

December 31, 1965)

### LIABILITIES

	1966	1965
CURRENT LIABILITIES:		
Bank advances .....	\$ 9,908,731	
Accounts payable (\$2,468,424 due to unconsolidated subsidiaries) .....	58,779,657	\$ 43,436,394
Taxes payable .....	11,922,083	7,888,597
Current portion of long-term debt .....	331,367	315,603
	<u>80,941,838</u>	<u>51,640,594</u>
TAXES ON INCOME DEFERRED TO FUTURE PERIODS .....	14,224,230	9,467,977
LONG-TERM DEBT (Note 3) .....	<u>9,358,576</u>	<u>10,497,197</u>
MINORITY INTERESTS IN CONSOLIDATED SUBSIDIARIES .....	<u>3,114,030</u>	<u>272,234</u>
CAPITAL STOCK AND SURPLUS:		
Capital stock (Note 4) —		
Authorized: 15,000,000 shares of no par value		
Issued: 11,931,514 shares .....	66,576,427	61,924,218
Contributed surplus .....	5,043,373	5,043,373
Earned surplus .....	169,780,096	150,496,183
	<u>241,399,896</u>	<u>217,463,774</u>

On behalf of the Board:

JOHN R. BRADFIELD, Director

R. V. PORRITT, Director

\$349,038,570

\$289,341,776

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

### FOR THE YEAR ENDED DECEMBER 31, 1966

1. (a) The accompanying consolidated financial statements include the accounts of Noranda Mines Limited and the following operating subsidiaries (including the accounts of their subsidiaries) whose financial statements are not published:

Brynnor Mines Limited  
Canada Wire and Cable Company Limited  
Canadian Copper Refiners Limited  
Noranda Copper Mills Ltd.  
Noranda Manufacturing Ltd.  
Noranda Sales Corporation Ltd.  
Norcast Manufacturing Limited  
Northwood Mills Ltd.  
Quebec Iron Foundries Ltd.

In respect of all other significant operating subsidiaries summarized financial information is provided to the shareholders in the Annual Report of Noranda Mines Limited.

- (b) Effective May 1, 1966, through Norcast, a newly incorporated subsidiary, Noranda acquired control of the Wolverine Die Cast group of companies. The results of these companies have been consolidated from that date. Goodwill shown on the balance sheet represents the excess of the consideration paid for this acquisition over the underlying net tangible asset values at May 1, 1966. It is the company's intention to amortize this goodwill against earnings over a reasonable period of years, commencing in 1967.
- (c) Noranda's share of the aggregate profits less losses of its unconsolidated subsidiaries for their 1966 fiscal periods amounted to \$10,702,270 compared with dividends of \$6,026,449 received from such subsidiaries and included in the consolidated statement of operations for the year. Noranda's share of the accumulated undistributed profits less losses of its unconsolidated subsidiaries of \$35,436,175 has not been taken up in the consolidated accounts.
- (d) The unconsolidated subsidiaries hold 62,400 shares of Noranda Mines Limited.
- (e) Directors of Noranda received fees of \$61,000 from that company and \$26,900 in their capacities as Directors of all subsidiary companies.



2. (a) The investments in "Associated and other companies" are not temporary investments and include shares carried at a book value of \$49,293,068 which have a quoted market value of \$131,237,705 at December 31, 1966. The latter amount does not necessarily represent the value of these holdings which may be more or less than that indicated by market quotations.
- (b) These investments include a 50% interest in Northwood Pulp, which commenced operations in 1966 and has not yet come into full production. At December 31, 1966 the investment in this company exceeded Noranda's share of the net assets by \$2,813,000.

3. Long-term debt:

Noranda Mines Limited —

4 <sup>3</sup> / <sub>4</sub> % sinking fund debentures maturing January 2, 1968, redeemable at par .....	4,978,000	
Less sinking fund payment due July 2, 1967 .....	218,000	\$4,760,000

Canada Wire and Cable Company Limited —

5 <sup>5</sup> / <sub>8</sub> % sinking fund debentures maturing June 1, 1983. Sinking fund principal repayments of \$250,000 are required in each of the years 1967 to 1982 inclusive, together with a final payment of \$750,000 at maturity	5,000,000	
Less purchased for sinking fund requirements .....	1,000,000	
	<u>4,000,000</u>	

Mortgages and serial debentures payable, maturing July 15, 1967 to February 1, 1975 less current portion of \$53,367 .....	58,576	4,058,576
--	--------	-----------

Oliver Sawmills Limited (a subsidiary of  
Northwood Mills Ltd.) —

6% debenture payable in 10 equal instalments commencing April 14, 1967 less current portion of \$60,000 .....	540,000	
		<u>\$9,358,576</u>

4. The following transactions affecting share capital occurred during 1966:

- (a) 83,104 shares were issued for a consideration of \$4,305,618 in acquiring the Wolverine Die Cast group of companies. Noranda is obligated to issue additional shares up to a

total value of \$947,265 as further consideration to the vendors should earnings of these companies exceed agreed targets over the next five years.

(b) Under the provisions of the Stock Option Plan, options on 12,925 shares were granted during the year and options on 11,804 were exercised for \$346,591 cash. At December 31, 1966 options on 25,271 shares were outstanding under this plan.

5. Noranda and its consolidated subsidiaries have undertaken commitments which will involve capital expenditures estimated at approximately \$75,000,000 during the next three years. In addition, Noranda has guaranteed repayment of bank loans now being made to Northwood Pulp Limited, to the extent of approximately \$28,600,000 U.S.

The estimated future cost of funding past service pension obligations of consolidated subsidiary companies is \$3,600,000.

## AUDITORS' REPORT

To the Shareholders of  
Noranda Mines Limited:

We have examined the consolidated balance sheet of Noranda Mines Limited and its consolidated subsidiaries as at December 31, 1966, and the consolidated statements of operations, earned surplus and source and application of funds for the year then ended. Our examination included a general review of the accounting procedures and such tests of accounting records and other supporting evidence as we considered necessary in the circumstances.

In our opinion the aforementioned financial statements present fairly the financial position of the companies as at December 31, 1966 and the results of their operations and the source and application of their funds for the year then ended, in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Toronto, Canada,  
February 17, 1967.

CLARKSON, GORDON & CO.,  
Chartered Accountants



## METAL MARKETS

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The strong demand for copper continued throughout 1966, reflecting escalation of the Viet Nam war during a period of high industrial activity in the United States and uncertainties regarding deliveries from Chile and Africa. World refined production as recorded by The Copper Institute was 4,090,000 tons, down slightly from 1965 reflecting strike losses in Chile and lower production in Africa. Metal production in Zambia has been curtailed and concentrate stockpiled since September due to transportation and fuel shortages. The Congolese Government embargoed shipments from the Congo in January and February. Deliveries to fabricators in the United States increased 385,000 tons, including shipments of 430,000 tons from the Government stockpile. Canadian consumption rose 20 per cent to an estimated 270,000 tons.

With marginal demand pushing the London Metal Exchange over 90¢ U.S. per pound in April, the Chileans broke all sense of stability by raising their price by 20¢ to 62¢. The Zambian producers reacted by adopting the three month L.M.E. quotation and, as practically all producers had to follow suit, this price now applies overseas. The major producer's prices in the United States and Canada were 36¢ U.S. and 45¢ Cdn. per pound, respectively, throughout the year. Mine production is increasing and consumption is down markedly overseas but the short term prospect is beclouded by such imponderables as the Viet Nam war, political situations in Africa and labour negotiations in Chile and the United States.

Free World mine production of zinc increased 4.7 per cent to 3,615,000 tons with

Canadian production up 13 per cent to 1,030,000 tons, and further additions scheduled for 1967. World consumption was up 2 per cent to 3,737,000 tons, reflecting record U.S. consumption of 1,425,000 tons which offset reduced activity overseas. With demand lower and industry stocks increasing, most major producers outside the United States, Japan and the Iron Curtain Countries reduced production by about 10 per cent during the last quarter.

The producer price basis outside North America was reduced from the sterling equivalent of 13  $\frac{3}{4}$ ¢ U.S. per pound to 12  $\frac{3}{4}$ ¢ in March. Prices in the United States and Canada continued at 14  $\frac{1}{2}$ ¢ U.S. and 14  $\frac{1}{2}$ ¢ Cdn., respectively.

World molybdenum production increased 20 per cent to 118 million pounds and a further 9 million pounds was released from the U.S. stockpile. Molybdenum availability is now sufficient to meet real consumption requirements and, barring strike losses, the improved position should continue through 1967.

Free World industrial consumption of silver increased 3 per cent and exceeded new production by 126 million ounces. The drain on U.S. Treasury stocks declined with the elimination of silver from most U.S. coinage and 592 million ounces remain to supplement production.

Industrial usage and private demand in inflationary areas absorbed all new gold production and free market prices improved marginally.

## REVIEW OF OPERATIONS

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### MINING

#### CONSOLIDATED COMPANIES

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##### HORNE MINE

Ore production, at 3,000 tons per day, aggregated 1,094,600 tons grading 2.04% copper and 0.18 oz. of gold per ton. Ore reserves were reduced 657,800 tons.

Feasibility studies, including further drilling, of the No. 5 Zone have been initiated to determine its economic potential.

Further diamond drilling from the 7,000' and 8,000' levels was unsuccessful and unless there is some encouragement from a limited amount of work yet to be done, these two bottom levels will be abandoned.

Of the ore mined during the year, 774,700 tons or 71% was treated in the concentrator at an average rate of 2,120 tons per day. Some 151,300 tons of copper concentrate was produced for smelting and 181,200 tons of pyrite concentrate for sale to chemical plants.

##### GECO MINE

Ore production averaged 4,000 tons per day, a 10% increase over the preceding year. The grade of ore treated averaged 1.95% copper, 4.15% zinc and 2.03 ozs. of silver per ton. New ore proven more than offset the tonnage mined and ore reserves were increased by 1,102,000 tons.

Development to the west of the No. 4 shaft was well advanced as were all facilities to handle ore through this shaft to the concentrator.

##### BRYNNOR MINES

###### Kennedy Lake Division

A strike, which remains unsettled, halted production and underground development on

July 19, 1966. To that date, some 436,600 tons of open pit ore had been milled and 291,000 tons of magnetite concentrate produced. Shipments of 321,000 tons of concentrate, averaging 64% iron, were made to Japan.

The labour situation is such that the proposed underground mining operation will not be feasible and it will be abandoned. Some 325,000 tons of ore remaining in the open pit should be recoverable.

###### Boss Mountain Division

This molybdenum mine in the interior of British Columbia completed its first full year of operation successfully. An average milling rate of 1,190 tons per day, with recovery at 95.8%, resulted in production of some 3,576,000 lbs. of molybdenum contained in concentrate. Development of the orebody is continuing. Ore reserves were maintained with some reduction in average grade.

#### UNCONSOLIDATED SUBSIDIARIES

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##### GASPÉ COPPER MINES

Mining operations produced 2,832,000 tons of ore from Needle Mountain, including 1,351,000 tons of open pit ore. Approximately 1,282,000 tons of waste was removed.

The concentrator treated an average of 7,480 tons of ore per day, the highest rate to date. Some 103,800 tons of concentrate were produced containing 28,764 tons of copper. Molybdenite concentrate recovered contained 531,600 pounds of molybdenum.

Some \$8,138,000 of an estimated total of \$15.1 million had been committed by year end



on the Copper Mountain Mine and the project is on schedule, with completion anticipated late in 1967. Approximately 4,230,000 tons of waste and low-grade material was removed from the orebody during the year and good progress made on concentrator additions.

## AUNOR GOLD MINES

A lower tonnage of slightly higher grade ore was milled and gold production of 79,400 ounces was about the same as for the previous year. The milling rate was 700 tons of ore per day, with an average grade of 0.32 oz. per ton.

Ten new stopes with an estimated 184,000 tons of ore averaging 0.34 oz. gold per ton were developed below the 2,900 level in readiness for mining. The system to supply classified milling tailings for backfill in stopes was nearly completed.

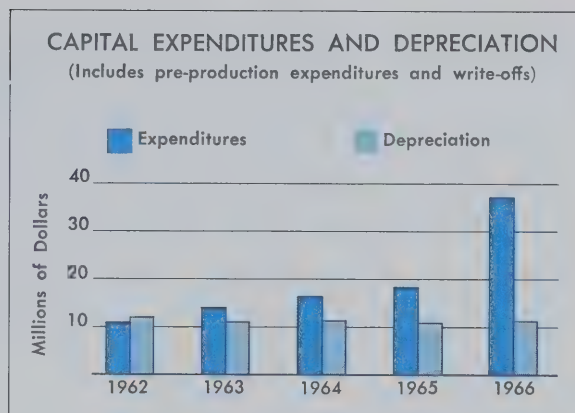
Ore reserves were increased slightly to 812,000 tons at 0.32 oz. gold per ton.

## HALLNOR MINES

Gold production was 50,200 ounces, slightly lower than the preceding year. The mill operated at a rate of 367 tons per day, averaging 0.38 oz. per ton, as compared to 360 tons per day averaging 0.41 oz. of gold per ton in 1965.

Some preparations were made for deepening No. 3 shaft a further 600 feet to establish four additional levels. The cost of this project, which will be completed early in 1968, is estimated at \$350,000.

Ore reserves were increased to 286,000 tons at 0.41 oz. of gold per ton.



## EMPRESA MINERA de EL SETENTRION

Production was maintained at 340 tons per day, averaging 0.51 oz. per ton, at this gold mine in Nicaragua. The milling rate was about 4% higher than in the preceding year and gold production, at 59,700 ounces, was about 6.5% higher.

Development of the new vein system is proceeding and proven ore reserves were increased by 46,000 tons to 186,000 tons averaging 0.51 oz. gold per ton.

## EMPRESA FLUORSPAR MINES

Through a Mexican subsidiary, this company operates a mine near San Luis Potosi with annual production of about 150,000 tons of fluorspar. Most of the output is metallurgical grade, sold to steel companies throughout North America.

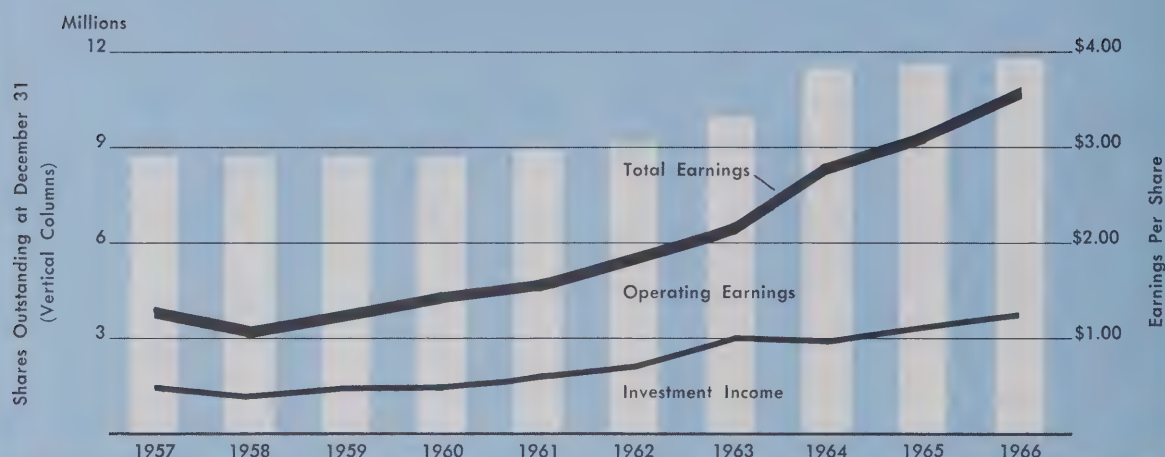
## ASSOCIATED COMPANIES

### NORMETAL MINING CORPORATION

The tonnage of ore treated in the concentrator averaged 920 tons per day containing 1.53% copper, 7.60% zinc, 0.024 oz. gold and 1.38 ozs. of silver per ton. Copper concentrate produced contained 9,504,000

## EARNINGS PER SHARE

Note: Earnings figures are as originally published each year without retroactive adjustment for the various consolidations which have occurred.



pounds of copper, 4,700 ounces of gold and 326,900 ounces of silver and zinc concentrate contained 45,045,000 pounds of zinc. After milling 335,700 tons, ore reserves were decreased by 5,000 tons.

No. 5 shaft was deepened 42 feet to bottom at 7,994 feet below surface and lateral development was carried out on the six new levels opened.

### QUEMONT MINING CORPORATION

An average of 1,584 tons of ore per day were treated (1,801 tons per day in 1965), the average metal contents being 1.08% copper, 1.93% zinc, 0.134 oz. gold and 0.7 oz. silver per ton. The copper concentrate produced contained 11,440,000 pounds of copper, 61,700 ounces of gold and 275,100 ounces of silver. Zinc concentrate produced contained 15,610,000 pounds of zinc. The reduction in tonnage was due to the continuing decrease in the number of available working places.

Underground exploration was continued but nothing of importance was found.

### KERR ADDISON MINES

Due largely to a shortage of miners the tonnage treated declined to 1,481 tons per day compared to 1,791 in 1965, but the grade at 0.357 oz. of gold per ton was slightly higher. Ore reserves at January 1, 1967 were 4,190,000 tons grading 0.439 oz. per ton, sufficient for 6 to 7 years at projected operating rates.

At the end of 1966 the net value of liquid assets was \$48 million compared to \$52 million a year earlier.

At the subsidiary, Joutel Copper Mines Limited, the surface plant and underground development work, required for the production of 700 tons of ore daily, were practically completed during 1966. Ore delivery to a local concentrator for treatment, on a toll basis, commenced on February 8, 1967.



Kerr Addison has a 25% interest in a copper deposit in O'Sullivan Township, Quebec, containing 750,000 tons averaging 3.5% copper. Shipments for treatment at a Chibougamau concentrator will commence about May 1 of this year.

Kerr will acquire an 80% interest in a uranium property near Espanola on which there is indicated a zone, at least 3,000 feet long and 2,000 feet in depth, estimated to contain 5,000,000 tons averaging 2 pounds of  $U_3O_8$  per ton. Several other mineralized zones have also been intersected and Kerr has acquired a large area to cover possible extensions.

#### PAMOUR PORCUPINE MINES

The mill operated at a rate of 1,678 tons per day and millhead grade averaged 0.114 oz. per ton. Gold production was 64,530 ounces, slightly higher than the preceding year due to the higher tonnage milled.

Most of the exploration and development work was done in lava formations. New ore proven was some 86,000 tons less than the tonnage milled and ore reserves at year end were 1,616,000 tons averaging 0.11 oz. of gold per ton.

#### ORCHAN MINES

Some 368,000 tons of ore were treated, averaging 10.83% zinc and 1.25% copper. The tonnage mined was more than offset by the proving of 822,000 tons in No. 1 orebody and ore reserves at year end increased to 3,311,000 tons.

In addition, the concentrator treated some 320,000 tons of ore from New Hosco Mines.

The small orebody of Bell Allard Mines Limited, a subsidiary company, was stripped

in preparation for open pit mining. The ore will be treated at the Orchan mill.

#### NEW HOSCO MINES

This operation continues under Noranda management following repayment of Noranda's advances. The scheduled production of 900 tons of ore per day was maintained.

#### CHILE CANADIAN MINES

A 45 day strike interrupted operations early in the year and reduced the quantity of ore treated to 159,000 tons and the recovery of cement copper to 4,308 tons.

Proven ore reserves at year end were 563,000 tons averaging 2.69% copper.

#### IMPORTANT INVESTMENTS

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##### MATTAGAMI LAKE MINES

Earnings of \$16,215,000 showed an increase of 11% over the 1965 figure of \$14,631,000.

An average of 3,866 tons of ore per day was treated, the grade being 13.2% zinc and 0.62% copper. The tonnage and zinc grade were somewhat higher than in 1965.

Apart from a disruption in shipments as a result of the rail strike, operations proceeded smoothly and the last of the company's debt was paid off on November 30, 1966.

##### CRAIGMONT MINES

The strike which commenced September 30, 1965 was settled in mid April 1966 and ore treated to October 31, the fiscal year end, amounted to 989,000 tons averaging 1.54% copper.

Earnings were \$7,628,000 compared with \$2,256,000 in 1965. Dividends were resumed in July and a total of 75¢ per share was paid by the end of October.

## METALLURGICAL

### CONSOLIDATED COMPANIES

#### NORANDA SMELTER

Changes and additions are being made to raise the capacity of the smelter. These are required to accommodate increasing receipts of custom materials, mainly from the Texas Gulf mine near Timmins which commenced shipments in November.

A pilot plant to test a new smelting process developed at the Noranda Research Centre is being designed for erection at the smelter.

#### CANADIAN COPPER REFINERS

Production	1966	1965
Copper — tons	285,000	273,000
Silver — ounces	10,051,000	9,647,000
Gold — ounces	527,000	546,000

A \$4 million extension to increase the refinery capacity to 28,500 tons of copper per

month is nearing completion and several other revisions and improvements are being undertaken. The extra capacity is required because of increasing output from the Noranda and Gaspé smelters.

An extension to the copper sulphate plant was completed, raising capacity to 1,000 tons per month.

### UNCONSOLIDATED SUBSIDIARIES

#### GASPÉ SMELTER

The smelter treated 266,800 tons of copper concentrate and flux, including 75,100 tons of custom concentrates, compared to a total of 243,000 tons in 1965.

Anode production was 10% higher at 47,169 tons, containing 46,980 tons of copper, 19,000 ounces of gold and 528,100 ounces of silver.

Capacity of Canadian Electrolytic Zinc plant at Valleyfield was increased to 400 tons of zinc metal per day during 1966. White buildings at right are those of St. Lawrence Fertilizers Limited.





## ASSOCIATED COMPANIES

### CANADIAN ELECTROLYTIC ZINC

The Valleyfield plant produced 87,400 tons of slab zinc, an average of 239 tons per day compared to 203 tons per day during 1965. Rated plant capacity was increased to 400 tons per day in November, with completion of a plant extension and the related roasters and sulphuric acid plant. The new facilities were brought into production with little trouble, and the expansion was completed well below the \$16 million budget.

The adjacent plant of St. Lawrence Fertilizers Limited, which will consume the acid from the new sulphuric acid plant, was completed in October at a cost of slightly over \$7 million. Severe startup problems have limited operations to date, leaving surplus acid to be disposed of by commercial sales.

Total tonnage of secondary zinc and aluminum products, sold from the Burlington, Ontario, plant of the wholly-owned subsidiary General Smelting, was 10,580 compared to 9,237 tons in 1965, and improved operating efficiencies have lowered unit costs.

## MANUFACTURING

### CONSOLIDATED COMPANIES

#### NORANDA MANUFACTURING LTD.

This company was formed during 1966 to co-ordinate the activities of Noranda's fabricating subsidiaries.

#### CANADA WIRE AND CABLE

Sales of Canada Wire and Cable increased but net earnings declined from those of 1965, due principally to startup costs of the Fergus plant and new equipment at Leaside and, to a lesser extent, lack of dividends from associates and labour problems at Leaside.

Capital expenditures of \$8 million were mainly on the Fergus plant, extension of the Simcoe plant and new facilities at Leaside. Substantial capital expenditures are anticipated in 1967 for further additions and improvements.

Operations of associated companies in Latin America were generally satisfactory. The company's associate in New Zealand will be in operation shortly. Wire Rope Industries of Canada (1966) Limited, in which Canada Wire and Cable has a 40% interest, increased sales again and completed the rearrangement of facilities in the Lachine plant.

Canada Wire and Cable's new 250,000 square foot plant at Fergus, Ontario, will specialize in the production of automotive wires, building wires and cables. The new strip mill of Noranda Copper Mills will be constructed in the field containing the near barn in the picture at right.





## NORANDA COPPER MILLS

Sales volume was maintained at both the Montreal East and Western Copper Divisions, in spite of the shortage of copper. The purchase of scrap at premium prices had a material effect on earnings which were nevertheless satisfactory. Improvements to facilities at both plants were made at a cost of \$2 million and a new strip mill is to be constructed in 1967 at Fergus, Ontario, at a cost of about \$7.2 million.

A subsidiary, Grandview Industries, completed its plastic pipe plant at Rexdale, Ontario. Sales were higher but earnings slightly lower because of startup costs of the new plant.

Canplas Industries, 50% owned by Noranda Copper Mills, began production of plastic pipe fittings in New Westminster, B.C. last April. The initial results are encouraging.



## QUEBEC IRON FOUNDRIES

Sales and earnings improved at the Noranda and Mont-Joli divisions. A subsidiary, Ocean Foundries Ltd., commenced production of grinding balls in British Columbia in February 1966. The new plant of Atlantic Foundries Ltd. at Bathurst, N.B., is nearing completion and should be in production in March.

## COULTER MANUFACTURING

The Coulter companies produce zinc die castings and stampings for the auto industry. The reduced rate of automobile production towards year end adversely affected sales volume and this, together with problems with new facilities, resulted in an operating loss. Capital expenditures to date on plant additions are \$1.3 million.

## NORCAST MANUFACTURING

Noranda purchased an 80% interest in Norcast Manufacturing Limited. Its three wholly-owned subsidiaries operate plants in Detroit and Windsor producing zinc die castings and related tooling for the auto industry. While results consolidated in this report were disappointing, significant improvements are expected. A \$6 million expansion programme is underway, primarily in Windsor, Ontario.

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Aerial view of Potash Division project, showing temporary headframes used during shaft-sinking operations and building foundation excavations. To be completed in 1969, this operation will produce 1,200,000 tons of product per year. (See page 20).

## FOREST PRODUCTS

### CONSOLIDATED COMPANIES

#### NORTHWOOD MILLS

The operations of two more sawmill companies were acquired in 1966, thus enlarging and securing the company's position in the southern area of British Columbia. Lumber sales for the year totalled 67 million board feet and the operations reported reasonable profits.

Sales of the lumber production of Northwood Pulp and others for whom the company is agent amounted to 151 million board feet. Prices were unusually high during the early part of 1966 but reversed themselves in the latter part to the point that the whole lumber industry was adversely affected for the year.

### ASSOCIATED COMPANIES

#### NORTHWOOD PULP

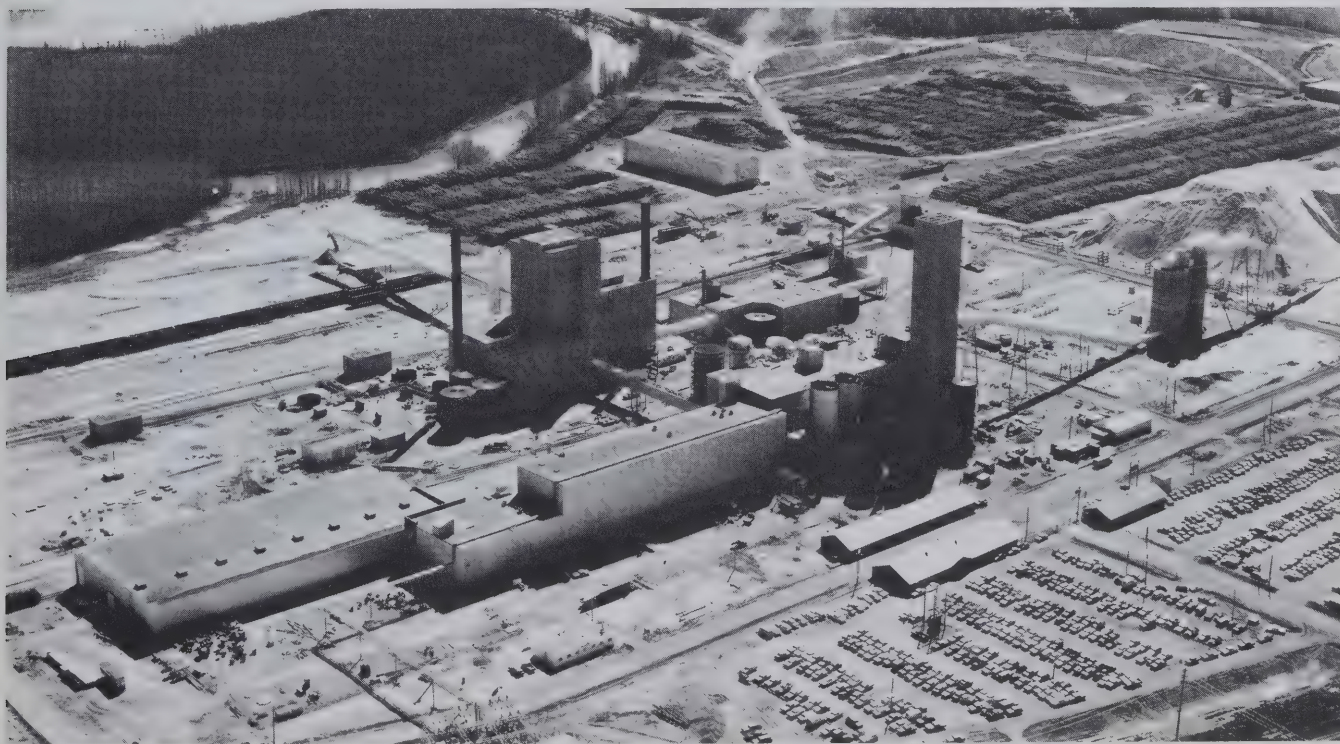
Construction of the pulp mill at Prince George, B.C. was completed on schedule and

operations began in the Fall. Construction cost totalled \$54,500,000, within the overall amount originally estimated. The break-in period was longer, more difficult and much more costly than anticipated. However, by the year end most operating problems had been resolved and the plant was producing 400 tons per day of prime quality bleached kraft pulp. Full production of 625 tons per day is expected without further difficulty.

Two sawmilling companies were acquired during the year, ensuring a substantial supply of wastewood chips for pulp manufacture and rationalizing the company's timber holdings. With minor exceptions, only the company's sawmills operate in its Pulpwood Harvesting Area, which should permit the maximum logging efficiency. Lumber operations produced 148 million board feet during the twelve months and were unprofitable in the aggregate. The five year expansion and modernization programme should be complete and permit profitable operations in 1967.

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The \$54,500,000 Northwood Pulp mill at Prince George, B.C., a joint venture with The Mead Corporation of Dayton, Ohio, was completed on schedule during the year.





## EXPLORATION, DEVELOPMENT AND RESEARCH

### EXPLORATION — NORANDA

The vigorous search for new mines was maintained in Canada, the United States, Europe and Australia. The objectives include uranium.

Development of the Newman property, a low-grade copper deposit at Babine Lake in British Columbia, has proven 51,000,000 tons of 0.5 per cent copper ore, sufficient for a 10,000 ton per day open pit operation. Engineering design for the plant and pit is underway.

A substantial interest has been optioned in Brenda Mines Limited, a large copper-molybdenum deposit. A feasibility study on this will be complete about mid-March. Several other base metal properties, in widely diverse locations, are showing considerable potential and are being investigated by methods utilizing the most modern techniques and equipment.

In Australia exploration will continue through a wholly-owned Australian subsidiary company.

Northern Oil Explorers Ltd. has been formed to conduct a \$25 million, five-year oil and gas exploration program in Canada. Noranda has a 20% interest and Great Plains Development Company of Canada Limited and Barber Oil Corporation of New York, 40% each in this venture.

### POTASH DIVISION

Sinking of the twin shafts some 40 miles east of Saskatoon is proceeding ahead of schedule. The No. 1 shaft was 770 feet and

the No. 2 shaft 1,310 feet below surface at year end.

Engineering design of the surface plant is on schedule, site preparation has been largely completed, concentrator equipment has been selected and ordered and construction of the office, warehouse and shop buildings is underway.

Provision has been made for ready expansion of the initial capacity of 1,200,000 tons of product per year, when market conditions warrant. Estimated cost at the current design stage, including property acquisition, is more than \$80 million. At the year end some \$21,400,000 had been spent.

The agreement with Central Farmers Fertilizer Co. of Chicago provides that after production begins, Central Farmers may earn the right to purchase a 49% interest in the project. In that event, a new company would be formed to be owned 51% by Noranda.

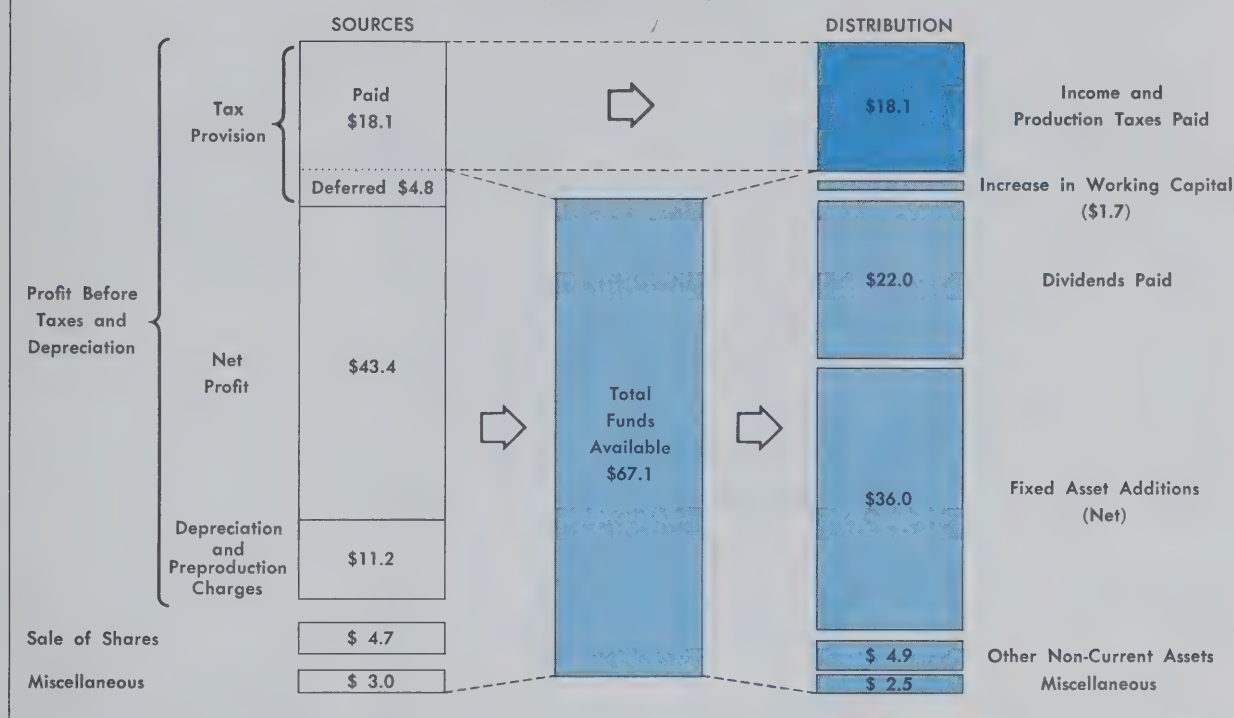
### NORANDA RESEARCH CENTRE

The Noranda group research program has been directed largely towards improving metallurgical processes and products and involved total expenditures of \$975,000. A great deal of research effort has gone into development of the new copper smelting process which is to be tested at Noranda. Significant knowledge of the physics of selenium has been gained. Also, encouraging results have been obtained in developing new and cheaper alloys suitable for grinding media in milling operations. The research staff numbers eighty, thirty of whom are professional scientists and engineers.

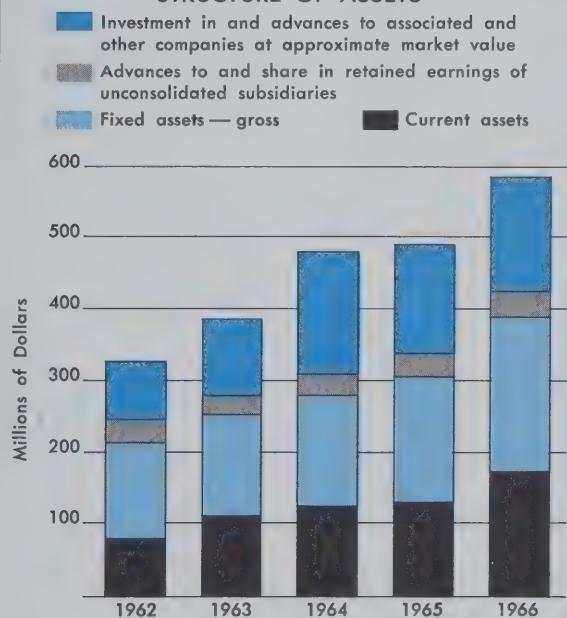


## SOURCES AND DISTRIBUTION OF FUNDS — 1966

(Millions of dollars)

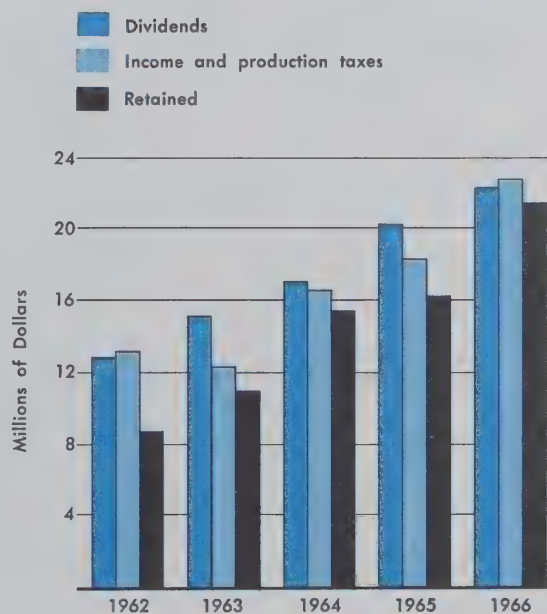


### STRUCTURE OF ASSETS



This graph is compiled directly from the published consolidated accounts. Had quoted market values been used for unconsolidated subsidiaries the 1966 column would be \$94,000,000 higher.

### DISTRIBUTION OF PROFIT



## NORANDA MINES LIMITED

### MINE PRODUCTION

	Ore Treated In		Metal Contents of Concentrates and Smelting Ores				
	Concentrator (tons)	Smelter (tons)	Copper (tons)	Gold (ozs.)	Silver (ozs.)	Lead (tons)	Zinc (tons)
<b>HORNE MINE</b>							
1966 .....	774,700	319,900	23,070	158,440	—	—	—
1965 .....	771,400	376,300	24,280	177,980	—	—	—
1964 .....	897,300	353,000	25,690	205,100	—	—	—
1963 .....	820,400	415,400	23,080	198,400	—	—	—
1962 .....	900,800	421,900	25,150	204,100	—	—	—
Total — 1927 to Date .....	30,410,000	22,254,000	1,150,590	8,012,820	—	—	—
<b>GECO MINE</b>							
1966 .....	1,459,600	—	26,770	4,650	2,203,500	840	46,120
1965 .....	1,326,400	—	24,790	4,430	2,214,600	1,060	42,880
1964 .....	1,299,300	—	25,620	4,300	2,468,800	1,750	56,640
1963 .....	1,281,200	—	22,950	4,500	2,437,000	1,570	59,530
1962 .....	1,282,400	—	21,980	4,800	2,106,700	980	49,360
Total — 1957 to Date .....	12,142,000	—	226,680	46,680	17,608,600	6,600	371,860

### SMELTER PRODUCTION

	Ores, Concentrates Flux and Scrap Treated		Metal Content of Anodes		
	Total (tons)	Custom (tons)	Copper (tons)	Gold (ozs.)	Silver (ozs.)
1966 .....	1,648,000	679,300	184,510	337,050	8,479,400
1965 .....	1,725,200	722,900	183,420	369,520	7,664,600
1964 .....	1,635,500	671,000	174,760	415,700	7,367,900
1963 .....	1,594,800	524,900	161,460	401,900	6,571,700
1962 .....	1,571,000	728,000	160,410	424,500	6,030,000
Total — 1927 to Date .....	45,761,000	14,751,000	3,183,160	12,007,470	99,655,400

## ORE RESERVES \*

	Reserves January 1, 1966 Tons	Production 1966 Tons		Reserves — January 1, 1967				
			Tons	Copper %	Gold oz./ton	Silver oz./ton	Zinc %	
Noranda Mines								
Horne Sulphide -----	4,451,500		3,831,600	2.47	0.19	—	—	
Horne Fluxing Ore ----	244,800		206,900	—	0.24	—	—	
	4,696,300	1,094,600	4,038,500					
Chadbourne -----	1,550,000		1,550,000	—	0.13	—	—	
No. 5 Zone (A) -----	320,000		320,000	—	0.23	—	—	
No. 5 Zone (B) -----	1,500,000		1,500,000	0.70	0.12	—	—	
Joliet Fluxing Ore -----	877,500	105,500	734,800	1.21	—	—	—	
	8,943,800	1,200,100	8,143,300					
Geco Mine -----	24,777,000	1,459,600	25,879,000	2.15	—	2.24	4.85	
	33,720,800	2,659,700	34,022,300					
Gaspé Copper Mines								
Needle Mountain Mine --	33,738,000	2,832,000	31,693,000	1.39	—	—	—	
Copper Mountain Mine	31,038,000	—	31,038,000	0.71	—	—	—	
Normetal Mining Corp. -----	1,642,000	335,700	1,637,000	1.97	—	—	7.10	
Quemont Mining Corp. -----	2,015,000	578,200	1,520,000	0.99	0.15	0.88	2.44	
Orchan Mines -----	2,759,000	368,000	3,311,000	1.23	—	1.31	11.13	
Chile Canadian Mines -----	683,000	159,000	563,000	2.69	—	—	—	

<b>GOLD MINES</b>	Reserves	Production	Reserves — January 1, 1967	
	January 1, 1966 Tons	1966 Tons	Tons	Gold oz./ton
Aunor Gold Mines .....	798,000	254,300	812,000	0.320
Hallnor Mines .....	233,900	133,800	286,000	0.410
Empresa Minera de El Setentrion .....	139,800	123,400	186,000	0.510
Kerr Addison Mines .....	4,825,500	540,500	4,190,000	0.439
Pamour Porcupine Mines .....	1,701,600	612,500	1,616,000	0.110

\* Noranda and subsidiary and associated companies.



# RESULTS OF PRINCIPAL UNCONSOLIDATED SUBSIDIARY AND ASSOCIATED COMPANIES

		Revenue From Production	Investment and Other Income	Emergency Gold Mining Assistance	Operating and Administration Expense	Depreciation and Other Write-offs	Income and Production Taxes
AUNOR GOLD MINES	1966	\$ 3,004,523	\$ 214,297	\$634,048	\$ 3,140,967	\$ 169,431	\$ 108,889
	1965	2,973,582	196,972	639,693	3,113,122	159,787	95,963
EMPRESA FLUORSPAR MINES	1966	1,648,707	—	—	1,038,752	148,457	106,690
	1965	1,708,512	—	—	1,034,107	146,530	126,854
EMPRESA MINERA de EL SETENTRION (U.S. Currency)	1966	2,171,795	28,133	—	1,724,562	61,672	176,392
	1965	1,991,747	23,725	—	1,505,462	69,625	179,560
GASPÉ COPPER MINES	1966	29,918,229	1,010,505	—	12,286,147	2,392,178	7,179,361
	1965	24,425,965	711,245	—	11,971,593	4,161,551	3,618,321
HALLNOR MINES	1966	1,896,877	290,738	236,221	1,690,553	148,904	140,551
	1965	2,009,469	265,684	161,198	1,562,733	175,214	186,300
KERR ADDISON MINES	1966	7,124,161	1,833,937	598,000	5,995,697	816,377	53,270
	1965	8,444,945	1,694,023	410,000	6,348,151	1,195,474	119,313
NORMETAL MINING CORPORATION	1966	7,308,373	414,695	—	4,410,824	394,489	1,030,745
	1965	7,503,965	378,873	—	4,403,124	259,733	1,182,373
ORCHAN MINES	1966	11,175,127	—	—	5,159,308	2,368,475	410,621
	1965	10,775,962	—	—	4,549,469	2,382,628	335,900
PAMOUR PORCUPINE MINES	1966	2,444,218	383,742	600,944	2,737,714	46,546	12,260
	1965	2,409,246	399,278	539,895	2,650,470	42,421	12,643
QUEMONT MINING CORPORATION	1966	8,737,710	673,104	—	5,531,657	364,909	1,370,082
	1965	9,593,083	595,625	—	5,573,756	253,055	1,648,764

NOTES: (1) Net revenue from sales f.o.b. mine.

(2) Includes custom tolls.

(3) Includes interest on debentures.

(4) On preferred shares.

(5) Direct interest plus that of subsidiary and associated companies.

# MINING COMPANIES

Net Profit	Dividends	Working Capital	Noranda's Interest		Direct Interest In			1966 Dividends Received per Noranda Share
			Direct	Total (5)	Net Profit	Dividends	Capital and Earned Surplus	
433,581	\$ 400,000	\$ 3,760,165	55%	55%	\$ 238,470	\$ 220,000	\$ 3,338,562	\$0.02
441,375	400,000	3,643,038						
354,808	49,500	1,987,813	75	99	266,106	37,125	1,708,618	—
401,021	26,400	1,673,325						
237,302	100,000	903,684	61	61	144,754	61,000	3,285,641	0.01
260,825	100,000	803,650						
071,048	4,770,000	22,693,037	98	98	8,889,627	4,674,600	32,983,003	0.39
385,739	3,180,000	19,413,742						
443,822	320,000	3,358,423	95	95	421,631	304,000	5,825,220	0.03
512,104	320,000	2,835,402						
690,754	2,825,421	11,835,070	31	43	834,134	875,881	10,465,972	0.07
886,030	2,813,879	11,068,016						
887,006	1,502,805	5,533,166	49	50	924,633	736,374	4,640,921	0.06
037,606	1,502,805	5,542,259						
236,717	—	3,099,975	45	59	1,456,523	—	5,382,067	—
507,965	—	2,096,426						
632,384	550,000	523,092	46	47	290,897	253,000	2,608,714	0.02
642,885	600,000	412,998						
144,166	2,102,168	12,408,284	49	53	1,050,641	1,030,062	8,675,683	0.09
713,133	2,102,168	13,429,692						

Noranda's direct interest in the undistributed earnings of its principal associated companies and other important investments for their 1966 fiscal periods was \$0.75 per share.

# NORANDA MINES LIMITED

## DIRECTORS

- \* JOHN R. BRADFIELD, Toronto
- A. O. DUFRESNE, Quebec
- \* HON. GEORGE B. FOSTER, Montreal
- L. G. LUMBERS, Toronto
- ANDRÉ MONAST, Quebec
- \* R. V. PORRITT, Toronto
- A. POWIS, Toronto
- HON. JEAN RAYMOND, Montreal
- \* W. S. ROW, Toronto
- J. D. SIMPSON, Vancouver
- LEO H. TIMMINS, Montreal
- W. P. WILDER, Toronto
- \* Members of Executive Committee

## OFFICERS

JOHN R. BRADFIELD  
R. V. PORRITT  
W. S. ROW  
A. POWIS  
R. P. RIGGIN  
D. E. G. SCHMITT  
A. H. ZIMMERMAN  
J. O. HINDS  
E. K. CORK  
C. H. WINDELER

## TRANSFER AGENTS

## REGISTRARS

## BANKERS

## GENERAL COUNSEL

## AUDITORS

Chairman, Noranda Mines Limited  
Retired Deputy Minister of Mines, Quebec  
Senior Partner — Foster, Watt, Leggatt and Colby  
President, Noranda Manufacturing Ltd.  
Partner, St. Laurent, Monast, Desmeules & Walters  
President, Noranda Mines Limited  
Vice-President, Noranda Mines Limited  
President, Alphonse Raymond Ltée.  
Executive Vice-President, Noranda Mines Limited  
Chairman, Placer Development Limited  
President, Timmines Limited  
President, Wood Gundy Securities Limited

Chairman of the Board and Chief Executive Officer  
President  
Executive Vice-President  
Vice-President  
Vice-President — Corporate Relations  
Vice-President — Mines  
Vice-President — Comptroller  
Assistant to the President  
Treasurer  
Secretary

Eastern & Chartered Trust Company  
The Chase Manhattan Bank, New York

Canadian Imperial Bank of Commerce  
Chemical Bank New York Trust Company, New York

The Bank of Nova Scotia  
Canadian Imperial Bank of Commerce  
The Royal Bank of Canada  
The Chase Manhattan Bank

Holden, Murdoch, Walton, Finlay, Robinson, Pepall & Harvey

Clarkson, Gordon & Co.



## OTHER OFFICERS AND OPERATING PERSONNEL

NORANDA MINES LIMITED	H. L. AMES, General Superintendent of Mills J. N. ANDERSON, Director of Metallurgical Operations R. C. ASHENHURST, Assistant Secretary W. J. BARBOUR, Assistant Treasurer B. C. BONE, Assistant Treasurer W. G. BRISSENDEN, General Manager—Mines D. A. FOSTER, Assistant Comptroller H. M. HEALEY, Assistant Comptroller K. N. RICHARDSON, General Purchasing Agent	Toronto, Ont.
HORNE MINE	H. S. BÉRUBÉ, Manager F. E. PATTON, Assistant Manager	Noranda, Que.
GECO DIVISION	J. A. GRAHAM, Mine Manager R. R. WAINWRIGHT, General Superintendent	Manitouwadge, Ont.
POTASH DIVISION	A. G. BALLACHEY, Manager J. M. GORDON, Mine Superintendent	Saskatoon, Sask.
<b>WHOLLY OWNED SUBSIDIARIES</b>		
BRYNNOR MINES LIMITED		
Boss Mountain Division	L. R. REDFORD, Manager	100 Mile House, B.C.
Kennedy Lake Division	T. R. WEARING, Manager	Ucluelet, B.C.
CANADIAN COPPER REFINERS LIMITED	J. H. SCHLOEN, Vice-President and Managing Director R. L. JOHNSTON, Works Manager J. H. MELLOR, Assistant Works Manager	Montreal East, Que.
NORANDA MANUFACTURING LTD.	L. G. LUMBERS, President WM. STEVENSON, Vice-President	Toronto, Ont.
<u>Subsidiaries and Associates:</u>		
CANADA WIRE AND CABLE COMPANY LIMITED	J. H. STEVENS, President H. O. COISH, Vice-President, Manufacturing	Leaside, Fergus and Simcoe, Ont. Montreal East, Que. Lancaster, N.B. Fort Garry, Man. Weyburn, Sask. New Westminster and Prince George, B.C.
Telecables & Wires Limited	L. E. MARRIN, Manager	Fort Garry, Man.
Wire Rope Industries of Canada (1966) Limited	R. J. SIMPSON, Vice-President	Lachine, Que. Smiths Falls, Ont. Vancouver, B.C.
NORANDA COPPER MILLS LTD.	F. J. E. LOCKHART, President	Montreal East, Que.
Montreal East Division	Y. L. CHICHMANIAN, Manager of Operations	Montreal East, Que.
Western Copper Division	N. E. LANG, Manager	New Westminster, B.C.
Canplas Industries, Limited	R. A. SKAER, General Manager	New Westminster, B.C.
Grandview Industries Limited	R. W. TERMUENDE, General Manager	New Westminster, B.C. Weyburn, Sask. Rexdale, Ont.
COMCO METAL PRODUCTS LIMITED		
COULTER MANUFACTURING LIMITED	A. G. COULTER, President and General Manager	Oshawa, Ont.

## NORANDA MANUFACTURING LTD., cont'd

NORCAST MANUFACTURING LIMITED	F. H. BLADERGROEN JR., Vice-President	Detroit, Mich.
QUEBEC IRON FOUNDRIES LTD.	R. P. RIGGIN, President E. A. RITTERSPACK, General Manager	Toronto, Ont. Noranda and Mont Joli, Que.
Atlantic Foundries Ltd. Ocean Foundries Ltd.	JEAN-GUY RICHARD, Manager T. R. RUDNICKI, Manager	Bathurst, N.B. North Surrey, B.C.
NORANDA RESEARCH CENTRE	DR. W. H. GAUVIN, Manager DR. W. C. COOPER, Head, Research Division DR. N. J. THEMELIS, Head, Engineering Division	Pointe Claire, Que.
NORANDA EXPLORATION COMPANY, LIMITED	DR. A. M. BELL, General Manager DR. R. J. M. MILLER, Chief Geologist DR. W. L. BROWN, Manager, Eastern Division B. O. BRYNELSEN, Manager, Western Division	Toronto, Ont. Vancouver, B.C.
NORANDA SALES CORPORATION LTD.	R. G. DRIVER, President K. C. HENDRICK, Vice-President W. G. DEEKS, Director	Toronto, Ont. London, Eng.
<u>Subsidiary:</u> Noranda Sales Corporation of Canada Limited		
NORTHWOOD MILLS LTD.	A. H. ZIMMERMAN, President O. A. PERRAULT, General Manager R. W. THORSEN, General Sales Manager	Toronto, Ont. Penticton, B.C. Toronto, Ont.

## OTHER SUBSIDIARIES

AUNOR GOLD MINES LIMITED	J. G. SPARROW, Manager	Timmins, Ont.
EMPRESA FLUORSPAR MINES LIMITED <u>Subsidiary:</u> Cia. Minera Las Cuevas S.A.	C. ALMAZAN, Managing Director	Mexico
EMPRESA MINERA DE EL SETENTRION	F. C. KETTEL, General Manager	Nicaragua
GASPÉ COPPER MINES, LIMITED	J. A. HALL, Manager M. TASCHEREAU, Assistant Manager	Murdochville, Que.
HALLNOR MINES, LIMITED	W. J. MARSHALL, Manager	Pamour, Ont.

## ASSOCIATED COMPANIES

CANADIAN ELECTROLYTIC ZINC LIMITED <u>Subsidiary:</u> General Smelting Company of Canada Limited	A. POWIS, President K. H. HEINO, Manager M. W. HOLLANDS, General Manager	Toronto, Ont. Valleyfield, Que. Burlington, Ont.
CHILE CANADIAN MINES S.A.	F. C. KETTEL, Vice-President	Chile
KERR ADDISON MINES LIMITED <u>Subsidiary:</u> Joutel Copper Mines Limited	J. H. STOVEL, Executive Vice-President S. C. YULE, Manager E. FUTTERER, Vice-President and Manager D. B. CAMPBELL, Resident Superintendent	Toronto, Ont. Virginiatown, Ont. Toronto, Ont. Joutel Township, Que.
NORMETAL MINING CORPORATION, LIMITED	A. D. DICKSON, General Manager R. J. ALLEN, Manager	Toronto, Ont. Normetal, Que.
NORTHWOOD PULP LIMITED	T. A. COLLINGS, Vice-President and General Manager	Prince George, B.C.
ORCHAN MINES LIMITED	D. BRIDGER, Manager	Matagami, Que.
PAMOUR PORCUPINE MINES, LIMITED	W. J. MARSHALL, Manager	Pamour, Ont.
QUEMONT MINING CORPORATION, LIMITED	A. D. DICKSON, General Manager W. D. JAMIESON, Manager	Toronto, Ont. Noranda, Que.





